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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,561	09/29/2003	Mats Larsson	004501-742	1495

21839 7590 12/14/2004

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EXAMINER	
LE, JOHN H	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,561	LARSSON ET AL.	
	Examiner	Art Unit	
	John H Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/29/2003 (Preliminary Amendment)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9 and 10* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/29/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. Correction is required. See 37CFR 1.72.

2. The abstract of the disclosure is objected to because of the form and legal phraseology often used in patent claims, such as "comprises" (line 4) should be avoided.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gyugyi et al. (USP 5,198,746).

Regarding claim 1, Gyugyi et al. disclose the steps of determining, for each of the interfaces (Col.14, lines 43-46, lines 63-68, Col.15, lines 1-4, lines 10-11), a voltage phasor at the interface and a phasor of a current flowing through the interface (e.g.

Col.8, lines 31-51), the measurements at the different interfaces being made essentially simultaneously (e.g. Fig.4, Col.14, lines 43-59, Col.15, lines 1-4, lines 10-11), and computing, from said voltage and current phasors, values of impedances constituting the equivalent circuit (e.g. Col.8, lines 31-40, Col.12, lines 30-39).

Regarding claim 2, Gyugyi et al. disclose the transmission section is a transmission corridor (e.g. Col.1, lines 16-19) having exactly two interfaces to other sections of the network (Col.14, lines 43-46, lines 63-68, Col.15, lines 1-4, lines 10-11).

Regarding claim 7, Gyugyi et al. disclose at least one interface comprises at least two physical power lines (e.g. Fig.4), and the voltage phasor at the interface is determined as a weighted sum of the voltages at the power lines (e.g. Col.15, lines 41-48).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gyugyi et al. (USP 5,198,746) in view of Lof et al. (USP 6,476,521).

Regarding claim 3, Gyugyi et al. fail to disclose a first interface connects the transmission corridor to a network section consisting predominantly of power generators, and a second interface connects the transmission corridor to a network section consisting predominantly of power consumers.

Lof et al. teach a first interface connects the transmission corridor to a network section consisting predominantly of power generators, and a second interface connects the transmission corridor to a network section consisting predominantly of power consumers (e.g. Fig.8, Col.18, lines 8-21, Col.20, lines 36-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the interfaces connects the transmission corridor to a network section consisting predominantly of power generators as taught by Lof el al. in a transmission line dynamic impedance compensation system of Gyugyi et al. for the purpose of providing a system protection scheme for improved detection and damping of power system oscillations (Lof et al., Col.4, lines 28-30).

8. Claims 4, 6, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gyugyi et al. (USP 5,198,746) in view of Pradhan et al. (USP 3,883,724).

Regarding claim 4, Gyugyi et al. fail to disclose the transmission network is represented by one of a T-equivalent and a Π-equivalent circuit.

Pradhan et al. disclose the transmission network is represented by a T-equivalent circuit (e.g. Col.8, lines 26-30).

Regarding claim 6, Pradhan et al. disclose the equivalent circuit comprises line impedances interconnecting the interfaces and shunt impedances connecting the interfaces to a common node (e.g. Fig.1, Col.3, lines 55-60, Col.4, lines 16-25).

Regarding claim 9, Pradhan et al. disclose computer program for determining parameters of an equivalent circuit representing a transmission section of an electrical

network, which is loadable and executable on a data processing unit (e.g. Col.16, lines 25-35, Col.20, lines 50-65, Col.21, lines 6-45).

Regarding claim 10, Pradhan et al. disclose data processing system (data input to computer 32) for determining parameters of an equivalent circuit representing a transmission section of an electrical network (e.g. Col. 5, lines 13-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the transmission network is represented by a T-equivalent circuit as taught by Pradhan et al. in a transmission line dynamic impedance compensation system of Gyugyi et al. for the purpose of providing speed and computational improvements are achieved by representing most or all of the actual power system components through analog simulation (Pradhan et al., Col.2, lines 50-52).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gyugyi et al. (USP 5,198,746) in view of Lof et al. (USP 6,476,521) as applied to claims 1-3 above, and further in view of Pradhan et al. (USP 3,883,724).

Regarding claim 5, the combination of Gyugyi et al. and Lof et al. discussed supra, disclose the claimed invention except computing parameters of a Thevenin equivalent of a network constituted by the transmission section and by the network section consisting predominantly of power generators.

Pradhan et al. teach computing parameters of a Thevenin equivalent of a network constituted by the transmission section and by the network section consisting predominantly of power generators (e.g. Col.8, lines 26-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include computing parameters of a Thevenin equivalent of a network constituted by the transmission section and by the network section consisting predominantly of power generators as taught by Pradhan et al. in a transmission line dynamic impedance compensation system of Gyugyi et al. in view of Lof et al. for the purpose of providing speed and computational improvements are achieved by representing most or all of the actual power system components through analog simulation (Pradhan et al., Col.2, lines 50-52).

Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 7, none of the prior art of record teaches or suggests the combination of a method for determining parameters of an equivalent circuit representing a transmission section of an electrical network, where the transmission section is representable as having at least two interfaces with other sections of the network, wherein the method comprises the steps of determining, for each of the interfaces, a voltage phasor at the interface and a phasor of a current flowing through the interface, the measurements at the different interfaces being made essentially simultaneously, and computing, from said voltage and current phasors, values of

impedances constituting the equivalent circuit, wherein at least one interface comprises at least two physical power lines, and the voltage phasor at the interface is determined as a weighted sum of the voltages at the power lines, wherein a current phasor representing a current through the interface is computed from the voltage phasor at the interface and a power flow through the power lines constituting the interface. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le
Patent Examiner-Group 2863
December 10, 2004

John Barlow
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